

**Remarks by NASA Deputy Administrator Lori Garver**  
**13<sup>th</sup> Annual FAA AST Space Transportation Conference**  
**February 11, 2010**

George, many thanks for that introduction and good morning to you all. I know it was not easy for most of you to make it here given the snow, sleet, and ice. With the airports closed, Charlie had to send his regrets as he could not make it back to Washington, but I am pleased to be here this morning.

Days after release of the President's 2011 budget, I am excited to continue to share information about our Nation's bold new direction for human space flight. We plan to transform our relationship with the private sector as part of our Nation's new strategy with the ultimate goal of expanding human presence across the Solar System.

Space tourism is a catalyst that has sparked a whole new industry of passenger-carrying spacecraft. New private firms that did not exist when this conference was first held 13 years ago now promise to revolutionize the space transportation industry. Thanks to President Obama, (and many of you), the United States and NASA are poised to take full advantage of this historic shift. The President's budget commits substantial funding for NASA to increase the number and scope of its commercial partnerships. We plan to make use of commercial space providers to transport astronauts to the space station and other low-Earth orbit destinations.

This new direction may have been suggested as the preferred option by the Augustine Commission, but the decision was made by the President, with the full support of NASA's leadership.

This change in national direction has been coming, with bipartisan momentum, for over two decades. It started in the Reagan Administration, when a Democratic Congress passed a law creating the FAA Office of Commercial Space Transportation, and President Reagan removed commercial satellites from the Space Shuttle by Executive Order. It continued in 1990, when a Democratic Congress passed the Launch Service Purchase Act of 1990, which was signed into law by the first

President Bush. Then, in 1998, a Republican Congress passed the Commercial Space Act of 1998, which was signed by President Clinton.

Most recently, in 2004, under the second President Bush, the Aldridge Commission concluded that *“NASA’s relationship to the private sector, its organizational structure, business culture, and management processes ... must be decisively transformed”*. This recommendation by the Bush Administration’s Aldridge Commission is especially pertinent now.

President Bush’s Aldridge Commission had more to say on this point. It recommended that *“NASA recognize and implement a far larger presence of private industry in space operations with the specific goal of allowing private industry to assume the primary role of providing services to NASA, and most immediately in accessing low-Earth orbit.”*

President Obama has decided that the time is now for NASA to decisively transform our relationship with the private sector. NASA Administrator Charlie Bolden and I fully support the President’s decision. NASA is going to implement a public-private partnership that brings the best of both private industry and the U.S. Government to the table. We will maximize each other’s strengths, and offset each other’s weaknesses.

In the short term, I know that many people are worried about jobs. I understand. This budget increases funding for NASA, which largely translates to increases in jobs.

In the long run, bolstering the U.S. commercial space industry will help the economy. A couple of decades ago, the United States was the world’s leader in launching commercial satellites. Today, we are fourth in the world, behind Russia, Europe, and Ukraine. We are in danger of falling further behind, as the Indians and Chinese bring increasingly cost-effective launch systems online. To facilitate U.S. commercial partnerships, we need to focus on some of the current barriers that commercial partners around the world face when trying to work in and with the U.S. The U.S. export control regime continues to engender delays and complications that greatly hinder the U.S. commercial launch industry. I know that many in the U.S. Government community, including President Obama, are aware of these concerns and are working hard to find ways to reform the regime, but right now, they remain impediments to full realization of the United States’ commercial potential.

These commercial partnerships will encompass more than space transportation, although that will be an essential component. Launches represent less than 5% of the global market for commercial space, which today is approximately a \$250 billion -per-year industry, and growing. That is \$250 billion with a “B”. The nation that is the world’s leader in commercial space will capture the lion’s share of new jobs in the future. Indeed, commercial space is where real job growth opportunities are located in that future.

If NASA’s investments in technology increase the growth of this industry by just 10% per year, for a period of 7 years, this would double this industry’s size to \$500 billion per year. That is major job growth. America needs jobs -- good jobs, and lots of them. The President wants NASA to foster real growth in the commercial space industry, and this new plan does so.

NASA will soon be spending more than a billion dollars per year to back-up our part in these commercial partnerships. We will be providing industry with NASA technical expertise, to help with the practical technical problems, as well as to make these vehicles safe enough for NASA astronauts to fly on. We will provide serious seed money on the investment side and a firm commitment to buy crew transportation services on the market side. We will diversify our risk by funding a portfolio of highly-qualified competitors. Instead of a highly-risky approach, in which we fund only one system, we are going to fund many systems to create redundancy. No single commercial system will represent the critical path. We are going to see the most exciting race that America has seen in a long time, and there is likely to be more than one winner.

It will likely be entrepreneurial and established entities that develop these new vehicles. This is really simply a new procurement method for working with NASA. Instead of cost-plus contracts, we will be utilizing fixed price contracts and later, service purchase agreements. We will ask industry to “put some skin in the game”, and will allow them to develop additional markets. This approach allows industry and government each to focus on those things we do best – while providing the very best value to the tax-payer. Many of these companies have been building spacecraft for the United States for the past 50 years. There is no doubt in my mind that these companies can build a safe, cost-effective commercial crew transportation systems for America. NASA is about to unleash the most exciting space competition in decades.

This new strategy also means helping to make our national investment in the Kennedy Space Center one that gives birth to a true commercial spaceport, with the most advanced launch facilities and passenger-carrying operations. Kennedy has tremendous assets, and the President's budget makes a significant investment in transforming KSC into a world-leading commercial space transportation facility.

The President's new strategy for NASA also means making full use of the extraordinary research capability of the International Space Station. We will not only have more cost-effective crew transportation to ISS, we are also continuing ISS operations to at least 2020, and reinvigorating the ISS research program. The United States spent about \$100 billion designing, developing, and constructing our part of the ISS over the last two decades. The previous NASA plan was to finish the ISS at the end of this year, to use only a small fraction of this unique research facility for the next five years, but we then had no plans for after that. The President's new plan for NASA fixes this problem.

We will open the ISS National Laboratory to new nontraditional users and new partnerships. It will truly become, as it was once envisioned, an orbiting hub for missions to Earth orbit and destinations beyond. A testing ground for breakthrough technology needed not only for living in space, but for research on human disease, and proving new technologies that will foster new space industries and create new jobs here in America. That is what commercial crew and cargo spacecraft will make possible – and the ISS in turn, offers that longer-term market, providing a catalyst for the commercial transportation development.

The President's budget supports the development of new technologies that we can make use of in voyaging to more distant locations in the Solar System, both for humans and for robots. When we go beyond the Earth-Moon system, we must do it in a cost-effective manner. In order to do that, we need the capability to refuel transfer stages, the ability to live off of in-situ resources, and the ability to take advantage of breakthroughs in on-orbit space propulsion.

Let me say this, and, I cannot say this enough, the wonderful people working on Constellation did not fail. The NASA and contractor workforce is an incredible asset to this nation and deserve to work on programs that are well thought out, make sense, and have the resources to succeed. Our Constellation workforce were not given the tools to succeed or a program

that could succeed. The situation we inherited upon our arrival was a program that did not make sense. We had a space transportation system to the ISS being developed (with 10's of Billions more to be invested) that would not have gotten to the ISS before its planned de-orbit. Even those companies developing our cargo transportation system would only have had a few year's operational time before the ISS made its way to the Pacific. We needed a sustainable strategy.

Now we have that strategy, and the President has given us the budget to pursue the capabilities we need to expand human presence across the solar system.

Some of you here at this conference are focused on the suborbital arena. NASA is also fostering the development of the commercial reusable suborbital transportation industry, because these suborbital RLVs could evolve to provide this Nation with much lower-cost and much more reliable access to space. I believe that suborbital RLVs could be important for science, technological, engineering, and mathematics (STEM) education, as well. Indeed, NASA's Commercial Reusable Suborbital Research program is developing plans to use commercial suborbital space vehicles to inspire our children.

I anticipate the day, soon I hope, when these suborbital reusable vehicles will be safe enough that NASA will pay for hundreds of astronauts, scientists, and technology developers to fly to space each and every year. Again, NASA will make every effort to ensure that these vehicles meet NASA's safety standards before we pay for any person to fly on these vehicles. We plan to take a slightly different approach in this case, and will treat these vehicles as the high-speed experimental aircraft they are. Dryden Flight Research Center, which has 60 years of experience flying high-speed experimental aircraft, including the X-1 and the X-15, will lead the safety assessment of these vehicles under NASA's Airworthiness Flight Safety Review process.

This is an historic moment for NASA, for the commercial space industry, and for the United States. For the first time, NASA will trust in the innovation of American entrepreneurs in space, just as America trusts entrepreneurs here on Earth for everything else. For the first time, we will unleash the genius of the American entrepreneur on our great national space agenda.

***NASA will transition from focusing on low-Earth orbit logistics and operations to space technology development and human exploration of the far frontier. This will allow NASA to do the things that the American Government does best — to make high-risk investments leading to fundamental breakthroughs and new innovative capabilities, and to explore new worlds where humans have not gone before. Commercial industry will do the things that it does best – designing and building the trains, owning and maintaining the trains, and then making them run on time.***

I will not minimize the difficulties we face in this transition. Change is always hard, which is why it is so rarely implemented in large national programs. But the President believes – and Charlie and I believe – that moving from Government-owned and -operated transportation systems is in our national interest.

This is a turning point in history. And it won't be easy. But we are at an incredible juncture and we are proud of the great support we are receiving from President Obama at a time when many agencies' spending is being frozen. We will need your ideas, your support, your energy and your sheer will as we move forward with our new direction. Thank you.